DEFENSE INJECTION/RECEPTION EMERGENCY ACTION MESSAGE
COMMAND AND CONTROL TERMINAL
(DIRECT)

DIRECT IMPROVEMENT AND SUSTAINMENT
FY06 WITH OPTIONS FOR FY07 THROUGH FY10

STATEMENT OF WORK
Revision 1

1.0 Scope.

This Statement of Work (SOW) establishes the detailed requirements for Improvement and Sustainment of the Defense Injection/Reception Emergency Action Message Command and Control Terminal (DIRECT) system. DIRECT performance requirements are addressed in Operational Requirements Document (ORD) AFSPC 006-95-I/III, dated 19 December 1995, and the DIRECT System Specification, Version 5.0, CDRL 117-10, dated 25 September 2000.

DIRECT provides an automated capability to compose, transmit, receive, process, readdress, and acknowledge Emergency Action Messages (EAMs), Emergency Action Support Messages (EASMs), and non-Emergency Action Messages (non-EAMs) on all available EAM communications systems with expansion for future growth.

1.1 Maintenance Concept Overview.

Operational DIRECT systems are currently installed in Nuclear Combatant Commander command centers at NMCC, NMCC Site R, USJFCOM, USSTRATCOM, USNORTHCOM, USPACOM, and USEUCOM. An additional system is available as a development/test and sustainment system. DIRECT consists of both commercial-off-the-shelf (COTS) equipment and newly designed/developed equipment. DIRECT utilizes a two-level maintenance concept--organizational and depot. Organizational level hardware maintenance will be performed by appropriately cleared contractor on-site technicians in TOP SECRET/SIOP-ESI facilities and will consist of system restoration by fault verification/isolation, removal/replacement of the faulty Line Replaceable Units (LRU), and functional checkout using existing technical manuals and other technical data.

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For newly designed equipment, depot level hardware maintenance will consist of diagnostic analysis, using common support equipment and available technical data, of returned LRUs to isolate faulty Shop Replaceable Units (SRUs), the removal and replacement of faulty SRUs, and functional checkout. SRUs in most instances will consist of circuit cards, power supplies, or fiber optics transmitters/receivers. The contractor will determine the most cost effective means of repair for each COTS hardware item consistent with meeting required system performance criteria and availability of technical data and spares. A DIRECT

commercial drawing package is available, but detailed depot repair procedures are not available. No peculiar depot test equipment or test program sets are available. Software maintenance will consist of periodic updates (estimated two per year) to implement changes to SIOP plans and values as well as to correct other problems and incorporate enhancements. Software maintenance must take place in a TOP SECRET/SIOP-ESI environment with appropriately cleared personnel. Offerors are advised that at the present time, the SIOP access granting official has chosen to disallow SIOP access for foreign nationals. This will preclude foreign nationals from working on the DIRECT software or in on-site maintenance positions.

2.0 Applicable Documents.

The following documents, of the issue in effect at the time of contract award, form a part of this SOW. In the event of conflicts between the referenced documents and this SOW, the contents of this SOW shall take precedence.

Document	Title
CJCSI 6811.01	(U) Nuclear Command and Control Technical Performance Criteria (Secret)
DoDS 5200.16	(U) Objectives and Minimum Standards for Communication Security Measures in Nuclear C3 (Secret)
	(U) EAP CJCS Volume I, General (Top Secret)
	(U) EAP CJCS Volume V, CJCS Control Orders (Top Secret)
	(U) EAP CJCS Volume VII, EAM Dissemination and Force Report Back (Secret)
NSA FSRS No. 96-02	DIRECT General Functional Security Requirements Specification (Secret/NF)
AFSPC (USAF) 006-95-I/II	(U) Operational Requirements Document (ORD) for DIRECT (Secret)
CJCSI 3231.01	(U) Safeguarding the Single Integrated Operational Plan (Secret)
	(U) C4I Systems and Networks; Telecommunications and Networks, and

	Automated Information systems Threat Environment Description (Secret)
	(U) Defense Intelligence Reference Document Information Systems Threat Assessment (Secret)
JANAP 128 (J)	Automatic Digital Network (AUTODIN) Operating Procedures
DCA Circular 370-D175-1	Defense Communications Agency (DCA) AUTODIN Interface and Control
	DIRECT Operations Manual
	DIRECT Organizational Maintenance Manual
ESC-DIR-01	System Specification, Version 5.0, for DIRECT Program

The following Interface Control Documents were developed by General Dynamics, using Associate Contractor agreements with communications system developers and/or ESC program offices where appropriate:

ICD Number	Interface
00-1426901	DIRECT to MILSTAR
00-1426902	DIRECT to SCTIS
00-1426903	DIRECT to AFSATCOM
00-1426905	DIRECT to VOICE
00-1426908	DIRECT to Nova
00-1426904	DIRECT to CUTS
ESC-DIR-135C	HMI Interface Control Document

New or modified software shall be developed in accordance with the following guidance:

Document	Title
MIL-STD-498	Software Development and Documentation

	5 December 1994
MIL-STD- 973	Military Standard for Configuration Management 17 April 1992
MIL-STD-1815A	Ada Programming Language 22 January 1983
ESC-DIR-116	Software Development Plan for DIRECT DIRECT Computer Resources Life Cycle Management Plan (CRLCMP) 17 November 2000

3.0 Contractor Logistics Support (CLS).

1. Assist the SPO in identifying, documenting, and developing alternative approaches to resolving software problems. Software problems may result from user requests, laboratory testing, field testing, and operational use of the system.

2. Accomplish, test, and deliver two scheduled block updates per year to the operational sites and to the DIRECT Software Support Facility (DSSF) at approximately six month intervals. Software updates shall include changes required to EAM templates, addresses, etc., in support of the new triad of conventional, nuclear, and special forces. The content of each software update shall be as determined by the DIRECT Software Support Working Group (DSSWG). Software updates shall be accomplished using processes and procedures described in the DIRECT Computer Resources Life Cycle Management Plan (CRLCMP) as guidance. The DIRECT Operations Manual and the DIRECT Organizational Maintenance Manual shall be updated and delivered with each software update. A Software Version Description shall be delivered with each software update. Affected specifications and other documentation shall be updated in redline format at the time of each software update. Updated final documents shall be delivered in accordance with applicable CDRLs. Provide update training to EA operators with each software change.

Technical Manual Contract Requirements (TM-86-01D)
Software Version Description (DI-IPSC-81442A/T)
Software Users Manual (DI-IPSC-81443A)
Software Test Report (DI-81440A/T)
Software Test Description (DI-81439A/T)
Software Product Specification (DI-IPSC-81441A/T)
Software Design Description (DI-IPSC-81435A/T)
Engineering Change Proposals (DI-CMAN-80639C)
Request for Deviation (DI-CMAN-80640C)

Specification Change Notice (DI-CMAN-80643C)
Commercial Drawings (DI-DRPR-81003C)

3. Maintain the address database for DIRECT and the Multifunction Secure Gateway (MSG). Incorporate address database changes into regularly scheduled software updates.

Database Design Description (DI-81437A/T)

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Document and track changes in accordance using procedures described in the CRLCMP as guidance.

Technical Manual Contract Requirements (TM-86-01D)
Software Version Description (DI-IPSC-81442A/T)
Software Users Manual (DI-IPSC-81443A)
Software Test Report (DI-81440A/T)
Software Test Description (DI-81439A/T)
Software Product Specification (DI-IPSC-81441A/T)
Software Design Description (DI-IPSC-81435A/T)
Engineering Change Proposals (DI-CMAN-80639C)
Request for Deviation (DI-CMAN-80640C)
Specification Change Notice (DI-CMAN-80643C)
Commercial Drawings (DI-DRPR-81003C)

5. Perform and document emergency software updates if required. Emergency changes shall be accomplished in accordance using procedures documented in the CRLCMP as guidance.

Technical Manual Contract Requirements (TM-86-01D)
Software Version Description (DI-IPSC-81442A/T)
Software Users Manual (DI-IPSC-81443A)
Software Test Report (DI-81440A/T)
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6. Monitor and assess changes and updates to commercial software products, as described in the CRLCMP, used in the DIRECT system and in the software support environment for possible implementation. Commercial software products will not be

upgraded routinely due to system security certification requirements, although emergency upgrades may be required if security flaws are found in the commercial products.

7. Maintain contract documentation in accordance with the contract CDRL.

8. Implement automated system requirements tracking and traceability tools and maintain databases required for these automated systems.

9. Possess and maintain a Software Engineering Institute Capability Maturity Model rating of Level 3 or higher. Maintain software using procedures and plans defined in the CRLCMP as guidance and provide quarterly metrics on cost, schedule and quality.

10. Provide technical assistance as required by providing a 24-hour, 7-day help desk service for EA operators and on-site service technicians to call for assistance in resolving operational questions and maintenance problems. Requests for assistance and actions taken shall be logged into the maintenance database.

11. Establish and maintain a maintenance database of on-site maintenance actions (both corrective and preventive, including sufficient information to measure the respond/repair time for the call and corrective actions taken), depot maintenance activities, spares usage, and requests for assistance to the help desk. Provide a monthly report of all these maintenance activities to the SPO in accordance with the applicable CDRL.

Technical Report/Depot Status Report (DI-MISC-80508A/T)

12. Provide both corrective and preventive maintenance support for the DIRECT equipment at the specified operational sites and at the DSSF site. Maintenance technicians shall respond to the site

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13. Perform on-site spares management and data management at each of the operational sites. These tasks shall be accomplished by the on-site maintenance technicians. Spares management shall consist of tracking the number of operational spares available at each site, packaging and arranging for the shipment of those failed LRUs which will be returned to the central depot, receiving spares shipped from the central depot, and turning failed classified equipment over to the designated Government representative for disposition.

14. Provide central depot management of spares. This shall include warehousing of depot spares stock, shipment of spares from the central depot warehouse to the

operational sites, management of spares shipment between sites, tracking of spares usage, and advising the Government of replenishment spares requirements.

15. Perform diagnostics of failed LRUs returned from the field and prepare cost estimates for repair of these units.

16. Update the Software Transition Plan, if requested by the Government, in accordance with the applicable CDRL, to reflect current information and include planning information for transition of software support to a different facility at the conclusion of the CLS contract.

Software Transition Plan (DI-IPSC-81429A)

17. Provide vendor support for the Multifunction Secure Gateway (MSG) software. This shall consist of establishing support agreements and/or service contracts with Cavalier and effort for technical coordination with Cavalier to adequately define and resolve software problems. Provide a test configuration and any required support for DISA recertification testing of the MSG and for integrated DIRECT/MSG in-plant testing.

18. Provide technical support to diagnosing and resolving communications system interface problems. Any changes identified that affect DIRECT interfaces to external systems shall be captured in the appropriate Interface Control Documents (ICDs) and the Interface Requirements Specification (IRS).

19. Update ICDs and other interface documentation to the current program baseline and incorporate and distribute changes as required in accordance with the CDRL.

Technical Report/ICDs Comm Systems (DI-MISC-80508A/T)
Technical Report/HMI ICD (DI-MISC-80508A/T)

20. Maintain the capability to modify the system hardware and software as authorized by the Government to provide enhanced capabilities or new communications interfaces. Assume one communications interface change per year.

21. Maintain and upgrade as required the DSSF suite of support equipment, which includes the Message Generator/Receiver (MG/R), support software, and databases.

22. Maintain and update as required the set of Formal Qualification Test (FQT) Test Procedure Sheets (TPSs), MG/R test support command and data files, and Protocol Analyzer test scripts and other support files.

23. Support and participate in on-site development and acceptance testing at two sites in accordance with the DIRECT CRLCMP for each update to the DIRECT software.

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24. Coordinate with the OO-ALC Silo-Based ICBM System Program Office to maintain consistency between the DIRECT and REACT versions of the message error correction and message parsing algorithms.

25. Provide analyses and/or measurements to ensure that all critical performance requirements, as defined in the appropriate system and software specifications, continue to be met for each updated version of software to be fielded.

26. With the Government, assess the need for operations training for new or modified operational capabilities associated with each software update and provide such update training if deemed necessary.

27. With the Government, assess the need for training for in-house or on-site hardware or software maintenance personnel to ensure that they remain current with the DIRECT system and maintenance environments and provide such update training when deemed necessary. Provide training for newly-assigned on-site maintenance personnel.

28. Perform ongoing system security assessments of each hardware and software change and maintain appropriate documentation. Assist the SPO in accomplishing security reaccreditations and recertifications every three years.

29. Update security documentation and incorporate and distribute changes in accordance with the CDRL whenever hardware or software security provisions are modified.

Security Vulnerability Analysis (DI-MISC-80841)
Descriptive Top Level Specification (DI-MISC-81342/T)
Covert Channel Analysis (DI-MISC-81345/T)
Fail Safe Design Analysis (Contractor Format)
Trusted Facility Manual (DI-TMSS-81352/T)
Theory of Compliance (DI-MISC-81609)

30. Maintain knowledge of all site configurations and provide assistance for site facility moves and equipment relocations as requested. Assume one site move per year.

31. Maintain technical knowledge of interfacing communications systems to assist in analysis of interface problems.

32. Provide continuing support to the SPO and DISA for the NC3 Hybrid Solution and Long Term Solution.

33. Provide a seamless transition of DIRECT system support from the present Bridge contract to the new contract.

34. Maintain a system operational availability (Ao) of b[4] as defined by the DIRECT ORD.

35. Provide program management.

Data Accession List (DI-CMAN-81453/T)
Contract Funds Status Report (DI-MGMT-81468)
Contract Performance Report (DI-MGMT-81466A)

4.0 Special Studies.

1. Perform technical studies as directed by the Government. These studies may generally be categorized as those which are associated with new DIRECT interfaces and applications and their use in the overall MEECN Network, such as analysis of new communications interfaces, new capabilities, or performance improvements.

Technical Report/Technical Studies (DI-MISC-80508A/T)

5.0 Sustaining Engineering Analyses.

1. Perform sustaining engineering analyses as directed by the Government. These analyses may generally be categorized as those associated with the current performance or sustainment of the system, such as analysis of performance issues, assistance to command center relocations, and other site assistance efforts.

Technical Report/Technical Studies (DI-MISC-80508A/T)

6.0 Technical Refresh.

1. Perform technical refresh to avoid system degradation caused by parts obsolescence and inability to obtain vendor support for commercial items, as well as other changes to DIRECT components to add flexibility for site installation and ensure that upgrades can be made seamlessly at the operational locations. These changes shall include: 1) upgrade of hardware and software for the Sun/Unix-based Message Processor, 2) upgrade of existing Local Area Network (LAN) to current commercial standards, 3) upgrade of hardware and software of the existing PC-based work stations to current commercial standards, 4) upgrades or changes to other DIRECT components to reduce size and weight and add flexibility for site installation, and 5) revision of all existing specifications and documentation required for NSA certification to reflect upgrades/changes to the current system configuration. Full system Technical Refresh is a projected four-year recurring cycle. The first year includes modifications and upgrades to DIRECT systems in the DIRECT System Support Facility (DSSF) to verify, test, certify, and accredit changes before their introduction to the operational field locations. Those upgrades which require operational test or evaluation under operational conditions may be introduced at a subset of the operational sites with the concurrence of the Director of Operations, Joint Chiefs of Staff. Installation of the upgrades at the remaining test sites and operational sites will be performed in the second, third, and fourth years of the four-year cycle.

2. Perform technical and security planning activities associated with technology insertion to upgrade DIRECT hardware and software in accordance with a final plan to be agreed to with the Government.

7.0 Work Requests.

1. Repair faulty LRUs on a case-by-case basis as directed by the Government.

8.0 Additional Systems.

1. Install the production system currently in storage at General Dynamics at a new site to be determined when directed by the Government. This effort shall include any required refurbishment of the system, shipping from the storage location to the installation site, installation, and checkout at the new site. This effort shall be added as a separate CLIN when details of the new installation are defined. Following installation, support for this system shall be accomplished under the CLS CLIN of this contract. Additionally, the support for any other new DIRECT systems which may be built and installed under other contract vehicles may be added to the CLS CLIN of this contract at a future date.

9.0 Communications Interface Changes.

1. Implement changes to DIRECT communications system interfaces as directed by the Government.

Engineering Change Proposals (DI-CMAN-80639C)
Request for Deviation (DI-CMAN-80640C)
Specification Change Notice (DI-CMAN-80643C)
Commercial Drawings (DI-DRPR-81003C)